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**Job Description**

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| **Job title** | Research Associate |
| **Department/School** | Mechanical Engineering |
| **Job family** | Education and Research |
| **Grade** | 7 |
| **Reporting to** | Principal Investigator (PI) or Co-Investigator (CI) |
| **Responsible for** | There may be a requirement for:  day to day supervision of other staff e.g. technical staff or, co-supervision of doctoral or undergraduate students |
| **Location** | University of Bath premises |

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| **Background and context** |
| The Department of Mechanical Engineering at the University of Bath wishes to  appoint a full-time Research Associate to work on an EPSRC-funded Programme  Grant called UK FIRES involving six universities. The Programme aims to embed  Resource Efficiency in UK Industrial Strategy, thereby achieving cuts in industrial  carbon emissions at the same time as strengthening the UK construction and  manufacturing sectors.  Part of the role is to support the development and application of new modelling  approaches developed within the project. With collaborators from the Knowledge  Representation and Reasoning Group at the University of Oxford  (<https://www.cs.ox.ac.uk/isg/krr/>) we have been developing tools based on  ‘semantic technologies’ to support our large-scale analysis of the UK production  system, forming a virtual ‘Physical Resources Observatory’. You will support the  further development and dissemination of these tools, and their application in other  research projects such as [C-THRU](https://www.c-thru.org/).  In the second part of the role, you will take the lead in applying these and other  methods in a specific study of decarbonisation opportunities for the food and drink  sector. Our ‘[Absolute Zero](https://ukfires.org/absolute-zero/)’ report set a framing for considering decarbonisation  opportunities relying on only today’s technologies. Since then we have been  working to elaborate on the consequences of this view for specific sectors. In this  role you will take the lead on the analysis and dissemination of our final report on  the Food and Drink sector, including analysis of material and energy flows within  the sector, review of existing literature on decarbonisation opportunities in the  sector, and engagement with industrial partners. |

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| **Job purpose** |
| To provide subject-specific research expertise and undertake specific research work to a Principal Investigator (PI)/Co-Investigator (CI) and their research team for a specified grant/project. |

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| **Main duties and responsibilities** | |
|  | Responsible to the PI/CI for (as appropriate to discipline): |
| **1** | Conduct individual and/or collaborative research projects. Contribute to the design and execution of the project e.g. timetabling and meeting project milestones; participating in regular discussions with collaborative partners. Generate, collect and analyse existing data related to the project using qualitative and/or quantitative techniques. |
| **2** | Writing up results of research and contributing to the publication of results in high-quality peer-reviewed academic literature. |
| **3** | Disseminating results of research project as appropriate to the discipline through activities such as   * overseas research visits * conference presentations * public engagement activities |
| **4** | Participate in departmental/group meetings and prepare and deliver presentations/seminars to project team, internal and external stakeholders or funders. |
| **5** | Assist with the supervision of postgraduate students and undergraduate project students and the assessment of student knowledge. |
| **6** | Continually update knowledge and understanding in field or specialism to inform research activity. |
| **7** | Identify sources of funding and provide assistance with preparing bids to funding bodies. Develop ability to secure own funding e.g. travel grants. |
| **8** | Contribute to the development of research objectives and proposals for own or joint research projects, with assistance of a mentor, if required. |
| **9** | Disseminate knowledge of research advances to inform departmental teaching. |
|  | You will from time to time be required to undertake other duties of a similar nature as reasonably required by your line manager. You are required to follow all University policies and procedures at all times and take account of University guidance. |

**logo-uob-resize[1] Person Specification**

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| **Criteria** | **Essential** | **Desirable** |
| **Qualifications** |  |  |
| A PhD degree in subject area of direct relevance for the project, or equivalent significant relevant experience and professional qualification | √ |  |
| **Experience/Knowledge** |  |  |
| Post doctoral experience |  | √ |
| Demonstrated significant depth and breadth of specialist knowledge of subject matter to contribute to research programmes and to the development of departmental research activities (in data analysis, computer science, data science, scientific modelling, or other relevant areas) | √ |  |
| Demonstrated awareness of latest developments in the field of research and in research design | √ |  |
| Demonstrated potential to publish in high quality, peer reviewed journals | √ |  |
| Knowledge and experience of wider issues around resource use, and carbon emissions, especially in relation to the food and drink sector. |  | √ |
| Experience of systems analysis and industrial ecology methods such as Material Flow Analysis and Life Cycle Assessment |  | √ |
| **Skills** |  |  |
| Ability to prepare research proposals, to conduct individual research work and to disseminate results |  | √ |
| Ability to setup, program and test software/scripts for data analysis and modelling |  | √ |
| Ability to organise and prioritise own workload to meet required deadlines | √ |  |
| Ability to write research reports and to effectively disseminate outcomes | √ |  |
| Excellent oral, interpersonal and written communication skills | √ |  |
| Proficiency in appropriate techniques (as appropriate to discipline) | √ |  |
| Proficiency in IT skills (as appropriate to discipline) | √ |  |
| **Attributes** |  |  |
| Commitment to working within professional and ethical codes of conduct | √ |  |
| Innovation and developing creative solutions | √ |  |
| Commitment to excellence in research | √ |  |
| Enthusiasm and self-motivation | √ |  |
| Tenacity – working to achieve own and team objectives and to overcome obstacles | √ |  |
| Ability to be an effective team worker | √ |  |
| Commitment to safe working practices | √ |  |